

ABSTRACT

A thin nitride film having a low resistance is formed at a low film-forming temperature.

In the step of forming a thin nitride film 24 of a high temperature-melting point metal by introducing a feedstock gas having the high temperature-melting point metal and a reductive nitrogen-containing gas having a nitrogen atom into a vacuum atmosphere, an auxiliary reductive gas free from nitrogen is also introduced. The high temperature-melting point metal deposited due to the auxiliary reductive gas compensates for the deficiency of the high temperature-melting point metal of the deposited nitride and thus enable the growth of the thin nitride film 24 having a low resistance.